

AMENDMENT TO CLAIMS 1-16

This listing of claims replaces all prior versions and listings of claims in the application

1. (currently amended) A saccadic-motion detection device comprised of an optical system for focusing light reflected and/or emitted from a subject's eye onto an optical navigation chip;
2. (currently amended) The optical navigation chip in claim 1 converts the incident light into digital representations of the movement or position of the eye, or both;
3. (currently amended) The saccadic-motion detection device ~~detector~~ of claim 1 can be configured to determine the rate of movement of the eye;
4. (currently amended) The saccadic-motion detection device ~~detector~~ of claim 1 can be configured to determine the angular position, speed, and/or acceleration of the eye;
5. (currently amended) The saccadic-motion detection device ~~detector~~ of claim 4 can be configured to compare the value of position, speed, and/or acceleration with a table associating known or standard conditions to those values determined from the subject's eye;
6. (currently amended) The saccadic-motion detection device ~~detector~~ of claim 4, wherein the condition can be reported among known conditions for normal or impaired conditions, due to at least one of intoxication, fatigue, dementia, delirium, psychosis, attention deficit, hyperactivity, depression, or mania;
7. (currently amended) The saccadic-motion detection device ~~detector~~ of claim 6, wherein the condition of intoxication can be determined that is caused by drugs, such as benzodiazepines, ethanol (alcohol), barbiturates, narcotics, narcotic mixtures, and amphetamines;
8. (currently amended) The saccadic-motion detection device ~~detector~~ of claim 1 wherein the optical navigation chip is configured with the capability to provide position or motion information at greater than 1200 times per second;
9. (currently amended) The saccadic-motion detection device ~~detector~~ of claim 1 wherein the optical navigation chip is configured with the capability to provide position or motion information at between about 1200 and about 6000 times per second;
10. (currently amended) The saccadic-motion detection device ~~detector~~ of claim 1 wherein a mechanical frame is attached to the optical system ~~apparatus~~ and the optical navigation chip so as to be grasped by hand;
11. (currently amended) The saccadic-motion detection device ~~detector~~ of claim 1 wherein a source of light, said source of light being outside the visible spectrum for humans, is attached and configured to the subject's eye so the reflected light is received by the optical system ~~apparatus~~;
12. Cancelled
13. (currently amended) The saccadic-motion detection device ~~detector~~ of claim 1 wherein the optical navigation chip contains an array of charge coupled devices (CCDs);

14. (currently amended) The saccadic-motion detection device ~~detector~~ of claim 1 wherein the subjects are creatures capable of saccadic eye motion, which includes humans and other animals;
15. (currently amended) A system for detecting saccadic eye movements comprised of a motion transducer using an optical apparatus configured to focus light received from a subject's eye, which then provides at least one indication of eye motion over a discrete interval of time. ~~position or motion at different times~~;
16. (currently amended) The system of claim 15 that includes a light source to illuminate the subject's eye, and a housing for the light source, a motion transducer, and an optical apparatus, and a housing, which can include a hand grip, so that the entire device is readily portable;